INVESTIGATING THE APPARATUS

Does Economics Have a Gender?

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ABSTRACT

We are pleased that our paper on gender balance in the economics profession incited a number of commentaries on “Why few women in economics?” (all in May 2008 Econ Journal Watch). The commentators include one sociologist, one psychologist, and three non-traditional economists—making for great breadth. Here we address the issues that seem most important to us.

Our paper provided original documentation of the low representation of women in academic economics in Sweden, and drew on other studies for Australia, Canada, Great Britain, and the United States. Across the five countries, the trends are remarkably similar. From being totally absent or having a very low presence among doctoral students in economics in the 1970s, women have since made significant gains. Today they account for about one third of the PhDs granted in the five countries. Nevertheless, that figure is lower than the percentage of women among the doctoral degrees as a whole, today approaching one half, and even more so compared to the share of women PhDs within the other social sciences. This brings out the question: Why is the representation of women in economics low relative to other fields?

An answer must account for a second matter; namely, why we have seen a strong inflow of women to economics during recent decades—especially pronounced in Sweden during the 1990s and 2000s. We find that our commentators are more eager to point out explanations of why women would not be attracted to economics than to analyze the forces which have in fact enhanced women’s interest in economics in recent years.

Another issue is women’s lack of progress in academic faculty rank, especially to full professor in economics. Despite women’s inroads in economics, many countries still count only a handful of women full professors, their proportion in

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the five countries we studied ranging between 5 and 9 percent. Figures presented at the 2008 meeting of the American Economic Association (CSWEP 2008) show a rising female proportion of newly completed PhDs (35 percent), but lagging female shares of assistant and associate professors, and women full professors hovering around 8 percent.3 Yet another question is whether it matters whether more women learn economics and gain position of influence in academic economics. Will it bring about any changes in economics or in society at large?

**An Economic Approach**

The approach taken in our paper to analyze the inflow and advance of women in economics is the standard economic one (see e.g. Jacobsen 2007, Ginther 2006). Employment outcomes are assumed to emerge from demand and supply. Women and men choose jobs and occupations by weighing costs, such as years of education, input of time and effort, against benefits, like pay, power, and prestige according to their preferences. Employers compare the contribution to output by workers to costs likes wages, non-monetary benefits and costs of absence and turnover. Institutions such as educational systems, labor market regulations, taxation, social security programs, and family policies—as well as traditions and social norms - play a role by imposing costs and benefits as well as by restricting choice or opening up opportunities.

Economists do not take the approach described above because they necessarily think that women and men are exactly alike genetically, or that discrimination, socialization, and power have no effect on outcomes. However, economists aim to explain as much as possible of the different behavior and achievements of men and women concerning education, the labor market and the family by economic motives and considerations, without having to assume innate gender differences in preferences or abilities.

In the opening article, we drew on researchers who apply the economic approach. They relate women’s increased investment in higher education and in math and sciences to changed patterns of marriage, child-bearing, and work in the labor market (e.g. Goldin et al 2006). Today in Sweden and the United States women outnumber men at colleges and universities. According to this view, changes in family-work patterns have made studying economics an increasingly rewarding career investment for women, thus explaining women’s rising interest in the field.

As noted in our earlier paper, when using an economic approach to explain the rarity of women full professors, other than a cohort effect, economists have studied the effect of factors that may influence the relative productivity of women.

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3 By July 2008 another woman had obtained the title of full professor in Sweden, bringing women’s share up to 7 percent. Through correspondence with Christina Neill, we have received data from 2006 for Canada showing that women full professors then constituted 8 percent, up from 5 percent in 1999.
and men, such as marriage, the presence of children, and job disruption, as well as time in research relative to time in teaching, choice of research field, number of publications etc. A significant portion of the gender promotion gap remains unexplained by these factors, and what is more, the various characteristics explain less in economics than elsewhere (Ginther and Kahn 2006).

All of our commentators take a different view than the one that is traditional in economics with its focus on the family distribution of labor and on acquired productivity traits. They suggest the following. Firstly, women may be genetically less able than men in capacities needed to succeed as an economist (Garett Jones). Secondly, women have different preferences than men. They less often like to work in the market or to take on demanding or responsible jobs (like a professorship), preferring time at home and with the children (Catherine Hakim). They less often like the occupational characteristics of the profession of economist (John Johnson). Or they think the present formalistic state of economics is silly and un-rewarding (Deidre McCloskey and Ann Mari May). Thirdly, men still hold the power in the field of economics, controlling the access to positions and to funding. It is in their joint interest to keep women out (Ann Mari May).

Thus in various ways the commentators suggest that economics does have a gender. It is a male subject, developed by men and controlled by men, with characteristics adjusted to the male brain and men’s preferences, rewarding the type of research that men like to do, with careers organized in a way to suit the life of men. In order to keep up the power, pay, prestige, and political influence of the subject, men tend to keep women out. No wonder that women give up and leave!

### Ability

Women and men are not alike in all respects. Drawing on studies of sex differences in genetics, brain anatomy and functioning, and hormones, Garett Jones shows that men and women differ genetically and argues that this may be related to gender differences in the advanced skills useful in economics. In particular, he emphasizes test results pointing to differences between men and women in mathematical abilities. In fact, Jones suggests that various forms of affirmative action may have already pushed the proportion of women in economics higher than it should be.

But Jones overstates the consensus of the literature on the size of the gender differences in mathematical ability, as well as on whether the origin is biological or social.¹ We read the meta-analysis article by Hyde (2005) on psychological gender differences quite differently than Jones does. As the title indicates, Hyde argues for a “gender similarities hypothesis”—that men and women are alike rather than dif-

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¹ For a collection of essays covering recent research on women in science, see Ceci and Williams (2006).
different. Stressing the stereotypes creates problems in schooling and the work-place, as well as in relationships.

Tests of girls’ and boys’ mathematical abilities have generally found their average mathematical aptitude and performance to be the same or only slightly different (Hyde 2005, Hyde et al 2008, Spelke 2005).5 Girls excel in computational skills and spatial memory, and boys in geometry, spatial rotation, and complex problem solving. It is also the case that the variance in men’s ability is greater. Thus it is more likely to find men at the highest and lowest levels of performance. More importantly, however, these differences have become successively smaller over time, they seem to be culturally related, and math performance seems to be related to the context of the tests (Guiso et al 2008, Goldin et al 2006, Hyde et al 2008).

An explanation for the decrease in differences in mathematical ability over time is that today girls more commonly enroll in advanced mathematics and science courses than before.6 Hyde et al (2008) also find that among Asian Americans, girls do better than boys. A study based on the PISA student assessments finds that the gender gaps vary widely by country (Guiso et al 2008). In Iceland, for example, girls perform better than boys, also within the 99th percentile.7 In addition, the study finds that in more gender equal countries (using an index of gender status) the math gap disappears, even in the tail of the distribution, and the reading gap (favoring girls) becomes even larger. Other studies have focused on the so-called stereotype threat: the cultural stereotype that women are not good in mathematics makes them under-perform. If women are told before a test that women and men generally perform equally on the test, women perform as well as men.8

Taken together, these observations make it unlikely that the gender gap in mathematical ability is related to biological differences between the sexes, but rather points to social conditioning as the cause. Economists would say that men and women have been exposed to different incentives to develop their capacities.

Historically, women’s lack of training in mathematics and science should be related to their low presence in economics, as in the sciences. But, as we have seen, as women have approached men in mathematical skills they also take up studies in economics. The problem today is their advancement within the academic system.

Is a lower or different mathematical performance also related to the few women among tenured professors? First, since the women who study economics

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5 In Sweden, boys do not perform better than girls in mathematics neither when gauged on national tests, nor on final school grades (Lindahl 2008).
6 To our great surprise, Jones uses IQ-data from 1932 to support the hypothesis. Not only have the opportunities for and attitudes to girls schooling changed during the three quarters of a century that has since passed, but also—hopefully—the quality of IQ-tests have improved. We doubt strongly the relevance of Jones’ data for today’s situation.
7 Incidentally, of 8 full professors in economics in Iceland, none are women (information supplied by Lilja Mösesdóttir).
8 For references to studies in this tradition see http://reducingstereotypethreat.org.
have been relatively few, they should be a more select group than the men. Second, we know of no research on the IQ or mathematical abilities of professors of economics. Are they the students with the highest mathematical ability? Are spatial rotations skills represented to a higher degree than other mathematical skills, or indeed than other cognitive skills? Or do other personality criteria determine who becomes a tenured economics professor?

Preferences

Even if men and women were equally able, they might differ in their preferences. This is the other major explanation for women's under-representation at higher ranks. However, the commentators refer to different preferences schemes. Various, women choose not to study economics because they do not like the subject, the methods, the work characteristics of economic research, to work in the market, to take on jobs that demand a lot of time and responsibility.

Reading the comment by psychologist John Johnson, it is not clear to us how various professions other than economics have been classified by the Holland RIASEC scheme for occupations. But we do know that during the 50 years it has been used, a great many occupations, especially those demanding advanced education, have changed from being male to female. Medical doctors, psychologists, lawyers, clergymen, biologists, and veterinarians are examples of occupations where today in many countries we see a majority of women. How does the RIASEC scheme handle this? Have the occupations meanwhile changed in character? There has in fact been a rising inflow of women into graduate studies of economics. How is this handled by the scheme as an explanatory system?

While keeping to its core of thinking, the subject of economics also changes through time and with technology. The last decades have seen the development of computers and the rapidly expanding possibilities to analyze vast amounts of empirical data. A recent study projected the future of economics by collecting the CVs of all assistant professors at the top-10 economics departments in the United States (Oswald and Ralsmark 2008). The authors find that the vast majority of these young economists are involved in empirical work, and conclude that the future of economics seems to lie in applied work rather than abstract theoretical work. Women amount to about 25 percent of their sample.

According to economic analysis, you cannot simply ask persons what they prefer to do and then classify the result as their “preferences.” Yet in the thinking of sociologist Catherine Hakim, it seems, women can freely choose what they wish to do and the outcome shows their preferences. Societal changes such as the introduction of contraceptives, the provision of equal access for women to education and jobs, the growth of white collar occupations and part time opportunities, and changing social attitudes have eliminated constraints on women’s choice. As...
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As a result, they can pick the lifestyle they like. It has been said that “economics is all about choices, while sociology is all about why there are no choices to make”. In Hakim’s analysis, this take seems to be reversed.

Economists, while focusing on the action of choice, hold that choices are made under constraints, and would emphasize constraints totally ignored by Hakim, those of price and income. According to Hakim, women’s choices are freer in the UK and US, because there is less public-policy interference with the division of labor between men and women. However, in each country there is a set of wages and gender wage differentials, economic policies affecting taxes, wealth, and inheritance, social policies including social insurance, social assistance and unemployment insurance, family legislation, population policies including regulation of abortion, child care institutions (formal or informal, private or public, subsidized or not subsidized), educational policies, transport policies, housing policies, and more. All these factors together determine the price and income constraints under which men and women choose when to live together, have children, how many, and how to divide work inside and outside the home, et cetera. Not until we have studied the influence of the various factors are we able to identify the underlying preferences.

Further, the differences in tastes, values, and preferences that Hakim refers to, if they could be found, imply that women prefer a work-home balance and are less inclined than men to give priority to making a career. This could possibly explain why we see fewer women in leadership positions in business as well as at the universities, but it does not explain the exceptionality of economics, i.e. why women are less well represented in economics than in other disciplines. A professorship would seem to be demanding, whether in literature, sociology, economics, biology, or physics.

Establishing differences in preferences is indeed a difficult task, and economists have tried a new and exciting mode of investigation, experimental economics. Since individual decisions depend on the context in which they are made, in

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9 Hakim attacks the Swedish model of family policy and gender equality and Swedish social scientists as spreading Swedish propaganda. Suffice it to say that Swedish economists doing research on the situation of women in the labor market have long pointed out that while the mix of Swedish family and tax policies has enabled women to combine work in the market and work at home, it has reduced the incentives for career advancement. Some references to such research can be found in Hakim’s comment, others in her books.

On page 214, Hakim gives a confused discussion of the relationships between women’s labor force participation, gender wage differentials and occupational sex segregation, asserting myths and outdated assumptions. At a seminar in which they both participated and in a book to which they both contributed, Jonung laid out the conflicting sex equality trends in gender pay differentials and in occupational segregation that can be expected as women enter the labor market from home. Jonung there argues that measures of occupational segregation should include work at home as an occupation, in order to give a more accurate picture of the development of gender equality (Jonung 1996, revised version Jonung 1998).
order to reveal deep preferences investigators must put individuals into situations simple enough that one factor can be isolated, such as risk preferences, altruism, or impatience. This is the approach of experimental economics. We are surprised that our commentators have not brought such studies to attention, as some of them point to gender differences in preferences which clearly could be relevant for the under-representation of women in leadership positions.

A survey of studies in experimental economics documents gender differences in preferences in three relevant areas, risk preferences, social preferences, and the reaction to competition (Croson and Gneezy 2008). Women are found to be more risk-averse than men. An academic career typically involves many years of uncertain financing without tenure, dependence on scholarships, research funding, and publication success, in hopes of a tenured position in the distant future. Pre-tenure employment is often concurrent with having children and building a family. Women, being risk averse, may thus opt for a stable job, usually with a higher initial salary. Studies also show that women shy away from competition, and while they may be less productive than men under competitive pressure, in fact are more productive under non-competitive conditions (Örs et al. 2008). The academic environment today, no doubt, is highly competitive—Brad De Long (2005) terms it a tournament. Women may thus rightly conclude that they have a comparative, or even an absolute, advantage in pursuits outside academia. Finally, women's social preferences seem to be more sensitive to context and social cues. This may lead them to choose professions and work tasks which feel socially appropriate.

Preference differences may thus contribute to the choice of women with a doctoral degree in economics to follow a path outside the universities. It is still not clear, however, why the effects of such preferences would be stronger within the field of economics.

Also, even if experimental results find differences in women's and men's preferences, we do not know if these are biological or socially acquired, possibly the result of pressures to conform to gender stereotypes. Thus, they may change as a result of the changing roles of women in society, e.g. women's rising education, incomes, wealth and participation in competitive sports. For example, Gneezy et al (2007) found that women are more competitive than men in a matrilineal society, while the contrary is true in a patriarchal society. Booth and Nolan (2008a, 2008b) found that girls' competitiveness and risk taking increases if they attend single-sex schools instead of co-ed schools. In addition, gender differences are sensitive to the gender mix of the experimental group, with girls being more competitive and more risk taking in an all-girl group. Thus, social learning and gender identity may influence preferences.

10 Another difference found by Dreber and Johanneson (2007) is a higher likelihood for men of lying in order to secure a monetary benefit.
11 Preferences regarding family-career trade-offs have not yet been possible to illuminate through experimental methods, thus they are not included in the survey (Croson and Gneezy 2008).
Finally, we want to air a warning from researchers in the area of experimental economics (Croson and Gneezy 2008, Dufwenberg and Gneezy 2005). There is a clear risk of a bias in published results, such that papers that document the existence of gender differences are more likely to get published, than those that find no ability or behavioral differences. Therefore, researchers will also put more effort into finding differences. In addition, there is a great demand from media and the popular press for the Martian men and the Venusian women.

Power

Ann Mari May brings up power relations and status maintenance. We take her to suggest that economics is a discipline with high status and that men have a joint interest and the power to preserve the situation by keeping women out. The conjecture raises a number of questions. Does economics have higher status than mathematics, medicine, engineering, biology, physics, or law? Why are men in economics more interested or more successful in keeping their cartel than men in other areas? Is the political influence of economics a partial answer to these questions?

No doubt, shared tacit knowledge, academic rituals, and hierarchy, as suggested by May (193) create constraints that may be difficult for outsiders to understand and overcome—whether distinguished by sex, race, class or origin. But why would these forces be stronger in economics than elsewhere? Do economists have more to lose than others by letting women into their ranks, for example in terms of wealth and political influence? And would we not expect the rising inflow of women at the PhD level during a number of decades to have eroded some of these barriers? At least in the United States, the share of women in economics has been large enough for some time to enable women to build their own networks. In addition, it is not uncommon today for a male economist to have a wife of the same profession—or daughters in the same line of studies—how does this affect the vested group interests?  

We think that the internal culture in economics, as well as in the natural sciences, is one factor holding back talented women. But we think this is more the result of informal structures related to the low proportion of women. In her presidential address at the annual meeting of The European Association of Labour Economists, Alison Booth (2008) provides a long list of factors that strengthen the glass ceiling for women in business and government, many equally relevant to

12 For an interesting analysis of how men’s interest in their daughters may make them voluntary renounce power in favor of women, see Doepke and Terrill (2008). Note also the finishing statements of a blog comment by Brad De Long (2005) of which Garrett Jones in his commentary quotes an earlier section: “I am, after all, the parent of a mathematically precocious daughter. I now have less than a decade to build a society that is properly open to her use of her talents. Put me down as demanding a backing-away from the work-intensity tournament model.”
academia, including institutional arrangements made with a (more than) full-time working man in mind, promotion criteria, control over resources, cultural values, willingness to bargain or market oneself, homosocial preferences, and questions of gender identity. With few women it may also be difficult to find supporting and encouraging friends and colleagues with whom to cooperate or collaborate, and it may be difficult to get included in informal networks or selection processes. Women do not yet fit the norm of a traditional scientist, especially within the sciences and in a similar way in economics, and it reduces their self-esteem. Adding everything up, women economists may well find that their comparative advantage lies outside the universities.

Why Care?

What difference does it make whether there are more women in economics and more women among the full professors? According to McCloskey, it will make no difference as long as these women stick to “Max U” and other formal modes of discourse. Yet economics is a strong and important tool for understanding the workings of society. In most countries, economists are very influential in public debate and policymaking. May emphasizes “agency,” meaning that knowledge of economics will enable women to engage in the economic arena and influence economic decisions. The different positions of men and women in the economy, e.g., work in the market versus at home, sectors and occupations, income and wealth, the form of responsibility taken for children and elderly, means that virtually every economic policy area—stabilization, growth, wage, social security, international, finance or development—will involve different consequences for men and women. Even if male and female economists would employ the same tools, they will view the social construction from different angles, and thus, as suggested by May, perceive different shortcomings. Women would revise and innovate in different areas, create new designs, invent new tools, apply different methods, and use different language and metaphors. A great deal of space and light should be added as a result.

Even if we accept the view of our commentators that women and men have different basic abilities and preferences, a greater gender mix could in fact enrich economic analysis. While praising the virtues of economics modeling, Paul Krugman, winner of the 2008 prize in economics to the memory of Alfred Nobel, in his comment on “how I work” states: “More important, however, I suddenly realized the remarkable extent to which the methodology of economics creates

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13 The European Commission has since almost a decade recognized the need to establish female networks, mentoring schemes, exchange of knowledge and policy proposals etc., in order to promote the participation of women in research in the sciences. See European Commission 2008.
blind spots. We just don’t see what we can’t formalize.” A social science like economics—and let us not forget it is a social science and not mathematics—should prosper from mixing persons of varied cognitive skills, modes of problem solving, and life experiences.

Another advantage, from the point of view of those of us who appreciate the wisdom of economics and would like to see more of it applied in public discourse, derives from more women studying economics and thus understanding economic reasoning. In addition, we will find more women among those who publicly advocate an economic approach to political and social issues, and who, in their positions as role models, may reach out to other women. Perhaps men and women voters would come to agree more than they do today.¹⁴

**Finally**

Does economics have a gender? Our commentators suggest that this is so and that economics is a male subject reflecting basic differences in men’s and women’s life preferences and abilities. We are not convinced. Economics may have a social gender, but gender roles change over time. New roles for women in the economy have made an increasing number of women discover the usefulness, strength, and charm of economics. The challenge now is to enable and encourage more women with an interest in the subject, not only to study economics, but also to remain at the universities and partake in the research and development of the field.

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¹⁴ Studies find a gender gap in the views of men and women on important economics issues, such as protectionism. Men “think more like an economist” than women. A proposed explanation is that fewer women study economics at college. See the entry on “The Gender Gap of Economics” by Bryan Caplan (2006).
References


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Christina Jonung obtained an MA from UCLA and a licentiate in economics from Lund University in 1985. She worked for many years as lecturer, administrator, and researcher at the department of economics at Lund University. Her research has focused on gender and economics, in particular occupational segregation. She edited (with Inga Persson) Economics of the Family and Family policies (1997) and Women’s Work and Wages (1998). During 1987-88 she served (with Ann-Charlotte Ståhlberg) as editor of Ekonomisk Debatt, a Swedish economic policy journal. She is now retired, works free-lance, and lives in Brussels. Her email address is Christina.Jonung@skynet.be.

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